

N 09/520,130

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	ARATHOON ET AL.	Examiner:	A. HOLLERAN
Serial No.:	09/520,130	Group Art Unit:	1642
Filed:	MARCH 7, 2000	Docket No.:	11669.132USC1
Confirmation No.:	1353	Customer No.	23552
Title:	A METHOD FOR MAKING MULTISPECIFIC ANTIBODIES HAVING HETEROMULTIMERIC AND COMMON COMPONENTS		

CERTIFICATE UNDER 37 CFR 1.10:

"Express Mail" mailing label number: EV 347834460 US  
Date of Deposit: October 1, 2003

I hereby certify that this paper or fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By: *Sheryl A. Boerboom*  
Name: Sheryl A. Boerboom

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT (37 C.F.R. § 1.97(c))**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

With regard to the above-identified application, the items of information listed on the enclosed Form 1449 are brought to the attention of the Examiner.

This statement should be considered because it is submitted before the mailing of a first Office Action after the filing of a Request for Continued Examination under 37 C.F.R. § 1.114 or a CPA under 37 C.F.R. § 1.53(d). Accordingly, no fee is due for consideration of the items listed on the enclosed Form 1449.

The Examiner's attention is directed to co-pending applications U.S. Serial No. 09/373,403 filed August 12, 1999 U.S. Serial No. 09/863,693 filed May 23, 2000 and U.S.

In accordance with 37 C.F.R. § 1.97(c)(2), a copy of each document or other information listed on the enclosed Form 1449 is provided.

No representation is made that a reference is "prior art" within the meaning of 35 U.S.C. §§ 102 and 103 and Applicants reserve the right, pursuant to 37 C.F.R. § 1.131 or otherwise, to establish that the reference(s) are not "prior art." Moreover, Applicants do not represent that a reference has been thoroughly reviewed or that any relevance of any portion of a reference is intended.

Consideration of the items listed is respectfully requested. Pursuant to the provisions of M.P.E.P. 609, it is requested that the Examiner return a copy of the attached Form 1449, marked as being considered and initialed by the Examiner, to the undersigned with the next official communication.

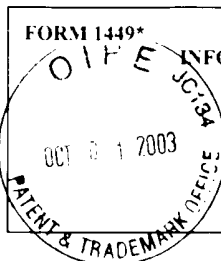
Please charge any additional fees or credit any overpayment to Deposit Account No. 13-2725.

Respectfully submitted,

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Date: Oct 1, 2003

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<b>FORM 1449*</b>  <b>INFORMATION DISCLOSURE STATEMENT</b>  <b>IN AN APPLICATION</b> (Use several sheets if necessary)	Docket Number: 11669.132USC1	Application Number: 09 520,130
	Applicant: ARATHOON ET AL.	
	Filing Date: MARCH 7, 2000	Group Art Unit: 1642
	Customer No. 23552	

U.S. PATENT DOCUMENTS						
EXAMINER INITIAL	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,731,168	03/1998	CARTER ET AL.			
	5,821,333	10/1998	CARTER ET AL.			

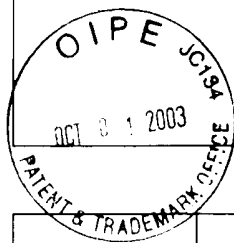
FOREIGN PATENT DOCUMENTS							
	DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
		Bedzyk et al., "Active Site Structure and Antigen Binding Properties of Idiotypically Cross-reactive Anti-fluorescein Monoclonal Antibodies", <u>The Journal of Biological Chemistry</u> , 265(1):133-138 (1990)
		Bryunck, A. et al., "Characterisation of a humanized bispecific monoclonal antibody for cancer therapy", <u>Br. J. Cancer</u> , 67:436-440 (1993)
		Carter, P. et al., "Toward The Production of Bispecific Antibody Fragments for Clinical Applications", <u>J. Hematotherapy</u> , 4(5):463-470 (Oct. 1995)
		Carter, P. et al., "Engineering antibodies for imaging and therapy", <u>Curr. Opin. Biotechnology</u> , 8(4):449-454 (Aug. 1997)
		De Jonge, J. et al., "Production and Characterization of Bispecific Single-Chain Antibody Fragments", <u>Mol. Immunol.</u> , 32(17-18):1405-1412 (Dec. 1995)
		Goddard et al., NCBI Genbank AF048774 (1998)
		Goddard et al., NCBI Genbank AF048775 (1998)
		Gulliver, G. et al., "Conversion of an Anti-single-stranded DNA Active Site to an Anti-fluorescein Active Site through Heavy Chain Complementarity Determining Region Transplantation", <u>The Journal of Biological Chemistry</u> , 269(11):7934-7940 (1994)

For example, Carter, P. et al., "Bispecific and functional single chain recombinant antibodies", Molecular Engineering, 18(1):31-40 (Aug. 2001)

EXAMINER	DATE CONSIDERED
EXAMINER: This table is to be filled out by the Examiner with the date the information was considered. It is not to be filled out by the Applicant and not considered. Include copy of this form for next communication to the Applicant.	

<b>FORM 1449*</b> <b>INFORMATION DISCLOSURE STATEMENT</b>  <b>IN AN APPLICATION</b> (Use several sheets if necessary)	Docket Number:	Application Number:
	11669.132USC1	09 520.130
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	Customer No. 23552	



	Mallender, W. et al., "Comparative Properties of the Single Chain Antibody and Fv Derivatives of mAb 4-4-20", <u>The Journal of Biological Chemistry</u> , 271(10):5338-5346 (March 8, 1996)
	Mallender, W. et al., "Construction, Expression, and Activity of a Bivalent Bispecific Single-chain Antibody", <u>The Journal of Biological Chemistry</u> , 269(1):199-206 (Jan. 7, 1994)
	Massino et al., "Quantitative analysis of the products of IgG chain recombination in hybrid hybridomas based on affinity chromatography and radioimmunoassay", <u>Journal of Immunological Methods</u> , 201:57-66 (1997)
	Merchant et al., "An efficient route to human bispecific IgG", <u>Nature Biotechnology</u> , 16:677-681 (July 1998)
	Muller, KM et al., "The first constant domain (C <sub>H1</sub> and C <sub>L</sub> ) of an antibody used as heterodimerization domain for bispecific miniantibodies", <u>FEBS Letter</u> , 422(2):259-264 (January 30, 1998)
	Muller, KM et al., "A dimeric bispecific miniantibody combines two specificities with avidity", <u>FEBS Letter</u> , 432(1-2):45-49 (July 31, 1998)
	Pluckthun, A. et al., "New protein engineering approaches to multivalent and bispecific antibody fragments", <u>Immunotechnology</u> , 3(2):83-105 (June 1997)
	Reddy, V. et al., "Production of Hybrids Secreting Bispecific Antibodies Recognising CEA and Doxorubicin", <u>Anticancer Research</u> , 13:2077-2084 (1993)
	Segal, DM et al., "Introduction: bispecific antibodies", <u>J. Immunol. Methods</u> , 248(1-2):1-6 (Feb. 1, 2001)
	Smith et al., "Variable Region Primary Structures of Monoclonal Anti-DNA Autoantibodies from NZB/NZW F <sub>1</sub> Mice", <u>Molecular Immunology</u> , 27(5):463-470 (1990)
	Tomlinson, IM et al., "The structural repertoire of the human V <sub>K</sub> domain", <u>EMBO Journal</u> , 14(18):4628-4638 (Sept. 15, 1995)
	Tomlinson, I. et al., "Methods for Generating Multivalent and Bispecific Antibody Fragments", <u>Methods Enzymol.</u> , 326:461-479 (2000)
	Tso, JY et al., "Preparation of a Bispecific F(ab') <sub>2</sub> Targeted to the Human IL-2 Receptor", <u>J. Hematotherapy</u> , 4(5):389-394 (Oct. 1995)
	Vuillez, J. et al., "Two-Step Immunoscintigraphy for Non-Small-Cell Lung Cancer Staging Using a Bispecific Anti-CEA Anti-Indium-DTPA Antibody and an Indium-111-Labeled DTPA Dimer", <u>The Journal of Nuclear Medicine</u> , 38(4):507-511 (April 1997)

EXAMINER	DATE RECEIVED
EXAMINER: This disclosure is hereby submitted to the Patent and Trademark Office, U.S. Department of Commerce, in support of the application for a patent in the United States and in foreign countries, and is hereby acknowledged by the Applicant.	